Abstract

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Title of the Thesis: The study of directly compressible tableting materials with granulated α-lactose monohydrate and lubricants

This thesis evaluates granulated lactose Lactopress® Granulated in combination with four types of lubricants in terms of flow properties, compressibility, ejection force, tensile strenght and disintegration time of tablets. Examined lubricants include magnesium stearate, calcium stearate, sodium-stearyl fumarate and glycerol-dibehenate at concentration 1 %. The compressibility is evaluated by energetic profile of compression.

Lubricants increased flowability of granulated lactose, most magnesium stearate. The total energy of compression increased with compression force, higher values showed tableting materials with sodium-stearyl fumarate and glycerol-dibehenate. The plasticity decreased with compression force, higher values showed tableting materials with glycerol-dibehenate. The lowest values of ejection force showed tableting materials with magnesium stearate and calcium stearate. Tableting materials with glycerol-dibehenate had extremely high values of ejection forces, and therefore glycerol-dibehenate in this concentration is unsuitable for use as a lubricant. The tensile strength of tablets increased with compression force, stronger tablets provided tableting materials with glycerol-dibehenate. The disintegration time increased with compression force, the longest disintegration time had tablets with sodium-stearyl fumarate.